

Claims

1. Composite material with a specific density in the range of 0.8 g/cm^3 to 1.2 g/cm^3 , comprising the following components:
 - (a) one or more grains of a non-metallic inorganic material with a specific surface area in the range of $10,000 \text{ m}^2/\text{m}^3$ to $1,000,000 \text{ m}^2/\text{m}^3$, having a porosity in the range of 10% to 80% with pores of which at least 50% have a pore size in the range of $0.1 \text{ }\mu\text{m}$ to $1000 \text{ }\mu\text{m}$, whereby of the grains, more than 50% have a grain size in the range of 0.1 mm to 50 mm ; and
 - (b) one or more plastics particles with a specific density in the range of 0.6 g/cm^3 to 1.2 g/cm^3 , and a specific surface area in the range of $50 \text{ m}^2/\text{m}^3$ to $1000 \text{ m}^2/\text{m}^3$, of which more than 50% have a particle size in the range of 0.01 mm to 100 mm .
2. Composite material according to claim 1, whereby the non-metallic inorganic material has a specific surface area in the range of $25,000 \text{ m}^2/\text{m}^3$ to $500,000 \text{ m}^2/\text{m}^3$.
3. Composite material according to one or more of the claims 1 or 2, whereby the weight ratio of non-metallic inorganic material to plastics particles lies in the range of 15:85 to 85:15.
4. Use of the composite material according to one or more of the claims 1 to 3 as bacteria carrier material.
5. Use according to claim 4 in plants for water treatment.
6. Use according to claim 4 or 5, whereby the specific density of the composite material corresponds to the specific density of the surrounding medium.
7. Method for manufacturing the composite material according to one or more of the claims 1 to 3, comprising the following steps:
 - (1) Mixing of the non-metallic inorganic material with the plastics particles;
 - (2) Filling of the mixture into a mould;
 - (3) Melting of the surface of the plastics particles; and possibly

(4) Pressing together of the melted plastics particles with the grains of the non-metallic inorganic material;

whereby step (4) may be carried out either simultaneously with step (3) or following step (3).

8. Method according to claim 7, whereby before step (3), a plastics powder made from a material identical to or similar to the material of the plastics particles is added.